

LIST OF CURRENT CLAIMS

1-30. (Cancelled)

31-63. (Cancelled)

64. (New) A method of producing a multilayer bellows seal, comprising the steps of:

preparing a plurality of substantially planar sheets;

obtaining at least one channel on at least one face of at least one of said sheets;

submitting said sheets to a shaping step to obtain corresponding hollow cylindrical bodies;

placing the obtained hollow cylindrical bodies inside one another, so as to superimpose said sheets;

placing at least a first and a second of said sheets into close mutual contact so that said at least one face with said channel in said first sheet faces said second sheet, thus defining a volume confined between said first and said second sheet;

sealing the edges of said first and second sheets so that the volume confined between said first and second sheets is hermetically isolated from the outside environment;

bringing said hermetically isolated volume to a preset pressure value.

65. (New) The method as claimed in claim 64, wherein said volume is connected with a pressure detector.

66. (New) The method as claimed in claim 64, wherein a plurality of channels are obtained on at least one face of at least one of said sheets, said channels being arranged parallel to one another or in a grid or radially.

67. (New) The method as claimed in claim 64, wherein said at least one channel obtained on at least one face of at least one of said sheets is arranged in serpentine.

68. (New) The method as claimed in claim 64, wherein said sheets forming the layers of the multilayer seal are substantially rectangular metal sheets.

69. (New) The method as claimed in claim 64, wherein said shaping step is obtained by means of a curving process followed by welding along two contiguous edges.

70. (New) The method as claimed in claim 64, wherein after said shaping, said hollow cylindrical bodies are submitted to a deformation step to obtain a corrugated profile.

71. (New) The method as claimed in claim 69, wherein said edges are sealed by welding through the interposition of a corresponding first and second insert.

72. (New) The method as claimed in claim 64, wherein said channels are obtained through mechanical deformation, laser technology, chemical corrosion, deposition of material or application of spacers onto the surface of said sheet.

73. (New) The method as claimed in claim 64, wherein said channels have half-circular, rectangular or triangular cross-sectional shapes.

74. (New) The method as claimed in claim 64, wherein said volume is brought to a pressure above or below the external pressure by means of a compression device or a suction device respectively.

75. (New) A multilayer bellows seal comprising at least a first and a second superimposed layers, in close mutual contact and sealed along the edges wherein at least one face of said first layer facing said second layer has at least one channel, thus defining a volume confined between said first and said second sheet and hermetically isolated from the outside environment, in which the pressure is set to a preset pressure value.

76. (New) The multilayer bellows seal as claimed in claim 75, wherein said at least one face of said first layer facing said second layer has a plurality of channels, said channels being arranged parallel to one another or in a grid or radially.

77. (New) The multilayer bellows seal as claimed in claim 75, wherein said at least one channel is arranged in serpentine.

78. (New) The multilayer bellows seal as claimed in claim 75, wherein said layers are hollow cylindrical bodies of sheet metal.

79. (New) The multilayer bellows seal as claimed in claim 79, wherein said hollow cylindrical bodies are sealed along their edges by welding.

80. (New) The multilayer bellows seal as claimed in claim 79, wherein said seal further comprises a first and second insert, the edges of said hollow cylindrical bodies being sealed to said first and second insert, respectively.

81. (New) The multilayer bellows seal as claimed in claim 80, wherein said first insert is a metal ring, said first hollow cylindrical body and said second hollow cylindrical body being welded to the inner wall and to the lower edge of said metal ring, respectively.

82. (New) The multilayer bellows seal as claimed in claim 81, wherein said second insert is a metal cover, said first hollow cylindrical body and said second hollow cylindrical body being welded to the side edge of said metal cover.

83. (New) The multilayer bellows seal as claimed in claim 81, wherein an annular groove communicating with said at least one channel is provided into the inner wall of said ring.

84. (New) The multilayer bellows seal as claimed in claim 83, wherein said annular groove communicates with the outside environment through a radial bore in said ring.

85. (New) The multilayer bellows seal as claimed in claim 84, wherein said radial bore is connected, outside said ring, with a pressure detector via a capillary.

86. (New) The multilayer bellows seal as claimed in claim 75, wherein said volume is brought to a pressure above or below the external pressure.

87. (New) The multilayer bellows seal as claimed in claim 75, wherein at least one additional layer is provided between said first layer and said second layer, said at least one additional layer having at least one channel on at least one face.

88. (New) A valve for fluids, including at least a multilayer bellows seal as claimed in claim 75.

89. (New) The valve for fluids as claimed in claim 88, further comprising a pressure detector connected with said volume defined between said first and said second sheet.